WE CLAIM:

1. A method of forming heat exchange surfaces on a core object, comprising:

placing at least a part of a thermally conductive core object within a mold cavity that is formed to define one or more heat exchange surfaces;

injecting a heated metal slurry into the mold cavity under a predetermined pressure; and

cooling the heated metal slurry thus forming a substantially continuous void free interface between the core object and the metal slurry when hardened for effective heat transfer across the interface.

2. A method according to claim 1, including heating a metal to a thixotropic state, and then performing said injecting step using the heated thixotropic metal as said metal slurry.

3. A method according to claim 2, including raising the temperature of the metal to about 900 degrees F prior to said injecting step.

4. A method according to claim 2, including using type AZ91D magnesium alloy as said metal, and raising the temperature of said alloy to about 900 degrees F prior to said injecting step.

5. A method according to claim 1, including forming the mold cavity to define one or more fins about the core object.

6. A method according to claim 1, including providing a heat conductive pipe as said core object.

7. A method according to claim 6, including inserting a rigid rod axially through the pipe thus avoiding deforming of the pipe during the injecting step.

8. A method according to claim 7, including forming the mold cavity to define one or more fins as the heat exchange surfaces about the outer circumference of the pipe.

9. A method of forming heat exchange surfaces on a core object, comprising:

arranging a first series of die plates in tandem for linear movement about a first perimeter of a first molding apparatus;

arranging a second series of die plates in tandem for linear movement about a second perimeter of a second molding apparatus;

forming each of the first series of die plates to define first parts of one or more heat exchange surfaces;

forming each of the second series of die plates to define corresponding second parts of one or more of said heat exchange surfaces;

positioning the first and the second molding apparatus so that corresponding ones of the first and the

second die plates face one another while being displaced by the apparatus along an axial direction with respect to an elongated thermally conductive core object;

placing the core object between the facing ones of the first and the second series of die plates;

urging the facing die plates to a closed position thus forming full mold cavities corresponding to the heat exchange surfaces about the core object;

injecting a heated metal slurry into the full mold cavities under a predetermined pressure; and

cooling the heated metal slurry thus forming a substantially continuous void free interface between the core object and the metal slurry when hardened for effective heat transfer across the interface.

10. A method according to claim 9, including heating a metal to a thixotropic state, and then performing said injecting step using the heated thixotropic metal as said metal slurry.

11. A method according to claim 10, including raising the temperature of the metal to about 900 degrees F prior to said injecting step.

12. A method according to claim 10, including using type AZ91D magnesium alloy as said metal, and raising the temperature of said alloy to about 900 degrees F prior to the injecting step.

13. A method according to claim 9, including forming the die plates to define one or more fins about the core object.

14. A method according to claim 9, including providing a heat conductive pipe as said elongated core object.

15. A method according to claim 14, including inserting a rigid rod axially through the pipe, thus avoiding deforming of the pipe during the injecting step.

16. A method according to claim 15, including forming the die plates to define one or more fins as said heat exchange surfaces about the outer circumference of the pipe.

17. A heat exchanging device produced according to the method of claim 1.

18. A heat exchanging device produced according to the method of claim 9.